

Appl. No. 10/052,966
Atty. Docket No. G-271ML (CP-1230)
Amdt. dated November 1, 2005
Reply to Office Action of August 2, 2005
Customer No. 27752

REMARKS

Amendments to the Claims

Claims 1-3, 7-9, and 11-24 are pending in the present application. Claim 4 has been previously canceled, and claims 5-6 are currently canceled. Claims 11-24 have been previously withdrawn. No additional claims fee is believed to be due.

Claims 1-2 and 8 have been amended as shown above. Support for these amendments can be found in the original claims and at page 2, line 22 to page 4, line 9 of the specification.

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested.

Rejections Under 35 USC 103(a) Over US Patent No. 4,645,771 to Mills

Claims 1-3, 5, and 6 are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 4,645,771 to Mills ("Mills"). The Examiner asserts that Mills teaches benzyl tetrahydropyridine compounds having a structural formula of a formula I, wherein the R2-R6 substituents on ring A are selected from hydrogen, halogen, hydroxy, alkyl or alkoxy radicals, and R1 is a hydrogen or an alkyl radical. The Examiner also asserts that Mills states that R2 and R6 can be hydroxy radicals with the remaining R3-R5 substituents being hydrogen. The Examiner notes, though, that Mills does not teach or exemplify Applicants' claimed compounds. However, the Examiner further asserts that Mills suggests preparation of various derivatives, including specific dihydroxy derivatives of pyridines that include Applicants' claimed compounds. Thus, the Examiner concludes that one of ordinary skill in the art would have been able to prepare Applicants' claimed compounds because Mills teaches tetrahydropyridine derivatives such as dihydroxybenzyl derivatives and Applicants' claims recite that R₁ and R₂ can together form a ring of C₅ atoms such as pyridine. Applicants respectfully traverse the present rejection based on the following comments.

Mills does not teach or suggest all of Applicants' claim limitations and, therefore, does not establish a *prima facie* case of obviousness. See MPEP 2143.03. As currently amended, Applicants' claim 1 is directed to a compound of claimed formula (1) wherein R₁ and R₂ are selected from respective lists of claimed substituents, or R₁ and R₂ together

Appl. No. 10/052,966
Atty. Docket No. G-271ML (CP-1230)
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Customer No. 27752

with the nitrogen atom to which they are attached form a C₃ to C₆ saturated or unsaturated ring *containing* in the ring one or more *additional* hetero atoms selected from O, S, and N. Applicants' claimed compounds can be used as couplers for oxidative hair coloring to provide bright yellow and orange-yellow coloration to hair.

In contrast, Mills discloses tetrahydropyridine derivatives for use as inhibitors of the aggregation of blood platelets for application in the treatment of thrombosis or occlusive vascular disease. While Mills more specifically discloses 1-benzyl-1,2,3,6-tetrahydropyridine derivatives with 2,6-dihydroxy substitution on the benzene ring, Applicants' claim 1 as currently amended does not include such compounds having pyridine derivative substituents. In Applicants' claim 1, where R₁ and R₂ together form a C₃ to C₆ saturated or unsaturated ring, that ring must contain at least two heteroatoms, one of which is the nitrogen atom to which R₁ and R₂ are attached. Therefore, a pyridine ring substituent, which contains only one heteroatom, is not included in the language of claim 1. As a result, Mills fails to teach or suggest all of the limitations of Applicants' claim 1.

Additionally, there is no motivation to modify the compounds disclosed in Mills to achieve Applicants' compounds of claim 1. Mills only discloses pyridine derivatives having 1-benzyl substituents. The 1-benzyl-1,2,3,6-tetrahydropyridine derivatives of Mills are described as possessing blood platelet aggregation inhibition properties similar to other known benzyl-substituted pyridine derivatives. Thus, one of ordinary skill in pharmacology and medicinal chemistry would not find motivation in Mills to modify the pyridine structure of the compounds of Mills because Mills teaches that the compounds of Mills possess properties similar to other pyridine derivative compounds.

Accordingly, a *prima facie* case of obviousness has not been established because Mills fails to teach or suggest all of the limitations of Applicants' claim 1 and further fails to provide any motivation to modify the compounds of Mills to achieve Applicants' claimed compounds. Therefore, Applicants' claim 1, as well as claims 2-3 which contain the limitations of claim 1, are novel and nonobvious over Mills.

Rejections Under 35 USC 103(a) Over US Patent No. 4,888,283 to Bertini et al.

Claims 1, 2 and 5-9 are rejected under 35 USC 103(a) as being unpatentable over US Patent No. 4,888,283 to Bertini et al. ("Bertini"). The Examiner asserts that Bertini teaches compounds that act as inhibitors of benzylaminoxidases, which compounds have

Appl. No. 10/052,966
Any. Docket No. G-271ML (CP-1230)
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Customer No. 27752

a general formula I in which R1 and R2 can be hydrogen, hydroxy, and alkoxyl, and R3, R4, and R5 can be hydrogen or alkyl. Thus, the Examiner asserts that Bertini teaches benzene diol compounds. The Examiner further asserts that Bertini suggests that for compounds of formula I containing alkoxyl groups at R1 and R2 the synthesis steps comprise preparing benzaldehyde from benzene, transforming the benzaldehyde to oximes, and reducing the oximes to benzylamino compounds. Thus, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to prepare hydroxyl containing benzene derivatives of formula I because Bertini suggests that preparing compounds by the described process is easily carried out. Applicants respectfully traverse the present rejection based on the following comments.

Bertini does not teach or suggest all of Applicants' claim limitations and, therefore, does not establish a *prima facie* case of obviousness. See MPEP 2143.03. As currently amended, Applicants' claim 1 is directed to a compound of claimed formula (1), wherein R₁ is selected from hydrogen atoms, C₁ to C₅ alkyl, C₁ to C₅ mono or dihydroxyalkyl, and phenyl or benzyl optionally substituted with a hydroxyl, amino or C₁ to C₃ alkoxy group, and R₂ is selected from C₁ to C₅ mono or dihydroxyalkyl, and phenyl or benzyl optionally substituted with a hydroxyl, amino or C₁ to C₃ alkoxy group, or R₁ and R₂ together with the nitrogen atom to which they are attached form certain heterocyclic rings as claimed. Applicants' claimed compounds can be used as couplers for oxidative hair coloring to provide bright yellow and orange-yellow coloration to hair.

Unlike Applicants' claimed compounds, the compounds of formula I of Bertini are intended for use as selective inhibitors of benzylaminooxidases with respect to other aminooxidases. Although the variable substituents of formula I of Bertini can be selected such that any two of the R1-R5 substituents are hydroxyl which thus provide a benzene diol compound, formula I of Bertini requires an *unsubstituted* aminomethyl group at the position on the benzene molecule between the R1 and R2 substituents. Bertini provides no teaching or suggestion for a *hydroxyalkyl-substituted* or a *phenyl- or benzyl-substituted* aminomethyl group at this position of the benzene molecule. In formula (1) of Applicants' claim 1 as currently amended, R₂ cannot be hydrogen or C₁ to C₅ alkyl, and, therefore, an aminomethyl group substituted with hydroxyalkyl or phenyl or benzyl is required at the 2-position of the benzene-1,3-diol derivative compound. As a result, Bertini fails to teach or suggest all of the limitations of Applicants' claim 1.

Appl. No. 10/052,966
Atty. Docket No. G-271ML (CP-1230)
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Customer No. 27752

Additionally, there is no motivation to modify the compounds disclosed in Bertini to achieve Applicants' compounds of claim 1. Bertini is directed to compounds suitable for causing the selective inhibition of benzylaminooxidase, which is an enzyme that catalyzes the oxidative deamination of various monoamines or polyamines in biological systems. As stated immediately above, formula I of Bertini requires an unsubstituted aminomethyl group at the position on the benzene molecule between the R1 and R2 substituents. Further, all of the example compounds described in Bertini have an unsubstituted aminomethyl group.

Accordingly, a *prima facie* case of obviousness has not been established because Bertini fails to teach or suggest all of the limitations of Applicants' claim 1 and further fails to provide any motivation to modify the compounds of Bertini to achieve Applicants' claimed compounds. Therefore, Applicants' claim 1, as well as claims 2 and 7-9 which contain the limitations of claim 1, are novel and nonobvious over Bertini.

CONCLUSION

In light of the amendments and remarks presented herein, it is requested that the Examiner reconsider and withdraw the present rejections. Early and favorable action in the case is respectfully requested.

Applicant has made an earnest effort to place their application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, Applicant respectfully requests reconsideration of this application and allowance of Claims 1-3 and 7-9.

Respectfully submitted,

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Date: November 1, 2005
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